Welcome

I will be sharing with you the New Jersey's current policies regarding the management of contaminated sediments in the Port of NY and NJ.

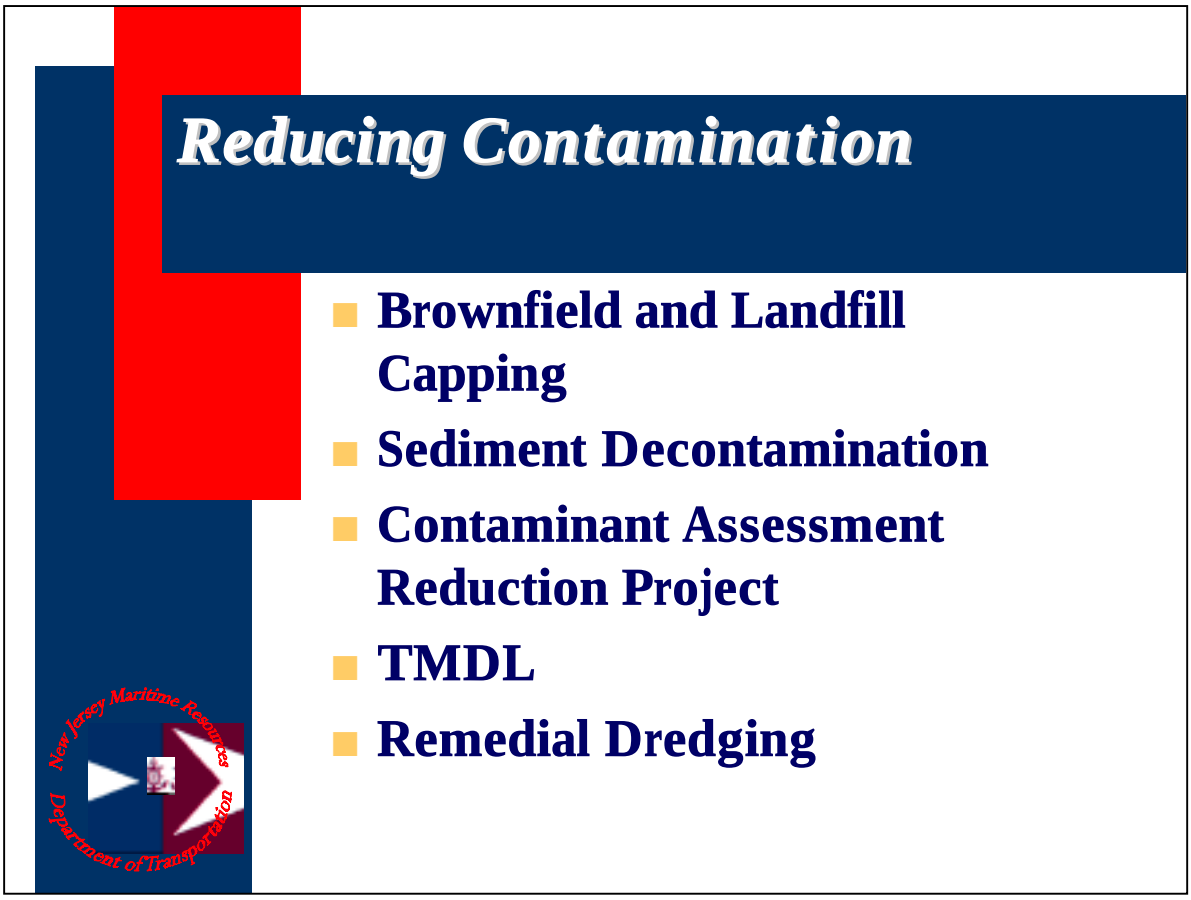
As always, I would like to acknowledge the hard work and creativity put into this program by my friends and colleagues at NJMR, the Port Authority of NY and NJ, the USEPA, the Army Corps, and the Office of Dredging and Sediment Technology of the NJDEP.

The NY Bight is home to the Port of NY and NJ, the largest port on the east coast and home to over 15 million people. As one of the premier container ports and the largest petroleum distribution hubs in the country, the Port utilizes over 250 miles of engineered waterways. While modern maritime vessels typically require depths of 45 feet or more, the natural depth of the Port is only 19 feet. This means that between 2 and 4 million cubic yards of sediment must be dredged each year. As if this wasn't daunting enough, the Port also lies in the oldest industrialized watershed in the country. If a mistake could have been made handling chemicals in the country, it was made here first…..

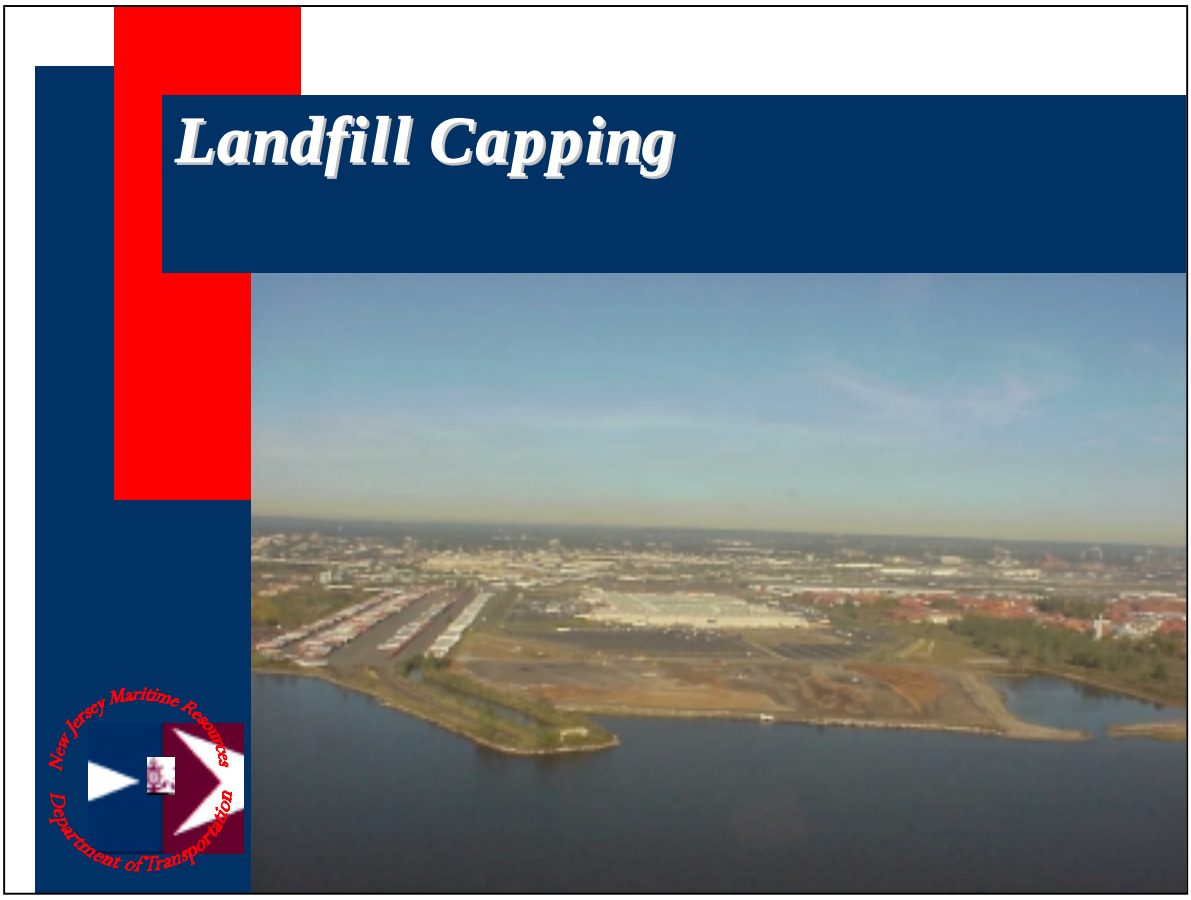
The Corps Regional Dredged Material Management Plan is an excellent example of interagency cooperation and regional goal setting. The 4 main goals for managing dredged materials in the Port are 1) we need to minimize our dredging requirements, 2) we need to clean up the mud as much as we can, 3) we must beneficially use as much as possible and 4) we dispose of only what we cannot use. I want to take some time on each of these 4 points.

Reducing the need to dredge requires a two prong approach: 1) make sure that the dredging is really needed, and 2) reduce the amount of sedimentation that occurs in channels and berths. For the first part, the increased costs of DM management is doing a good job of controlling this without any help from us. But the risk of loss of needed but less profitable enterprises remains high. A more efficient strategy is to reduce sediment loads. NJDEP has embarked on a Watershed Management program that includes rigorous controls on erosion. Technology also can play a part:

There are 2 technologies out there right now that may be useful to reduce dredging needs: Turbo Scour and AirGuard. Turbo Scour is a system that re-suspends recently deposited sediments and “blows” them out of the berthing area. No one in the Port has tested one of these, but we have heard of several interested parties. The biggest issue with Scour is entrainment of fish fry in the intake. Air Guard is a pneumatic sediment suspension system that generates a high energy bubble field that reduces sedimentation in berthing areas. NJMR has tested Air Guard in an inter-pier berthing area and found favorable results. A report is available on our webpage.



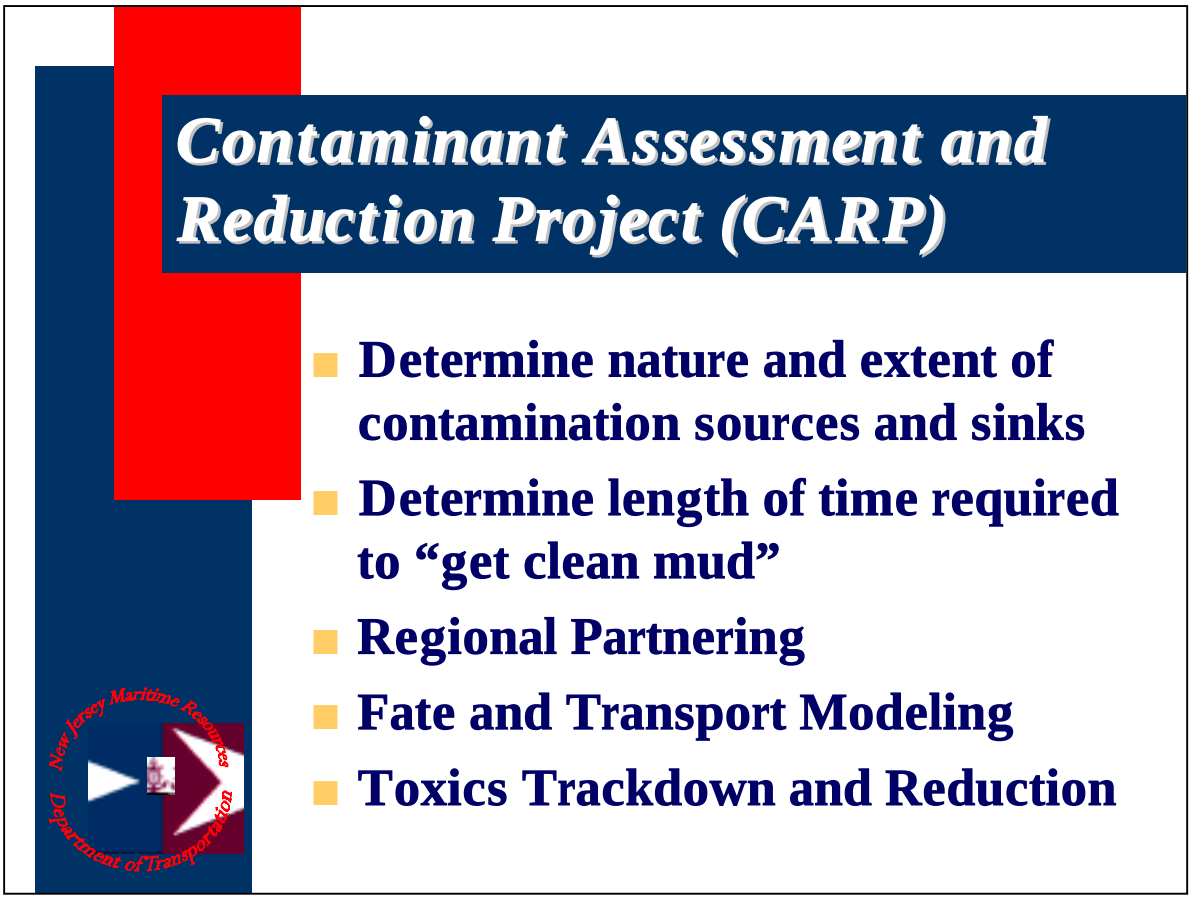
Assuming now that we only dredge where we need to, the second challenge is to reduce contamination in our sediments. For this, NJ has taken a very active role partnering with the USEPA under the Harbor Estuary Program. We have also encouraged the use of dredged materials to help reduce contaminant losses into the harbor from abandoned sites. These are wise investments, as the DMMP estimates that contaminant reduction may save the Port over a billion dollars in reduced dredging costs over the life of the DMMP.



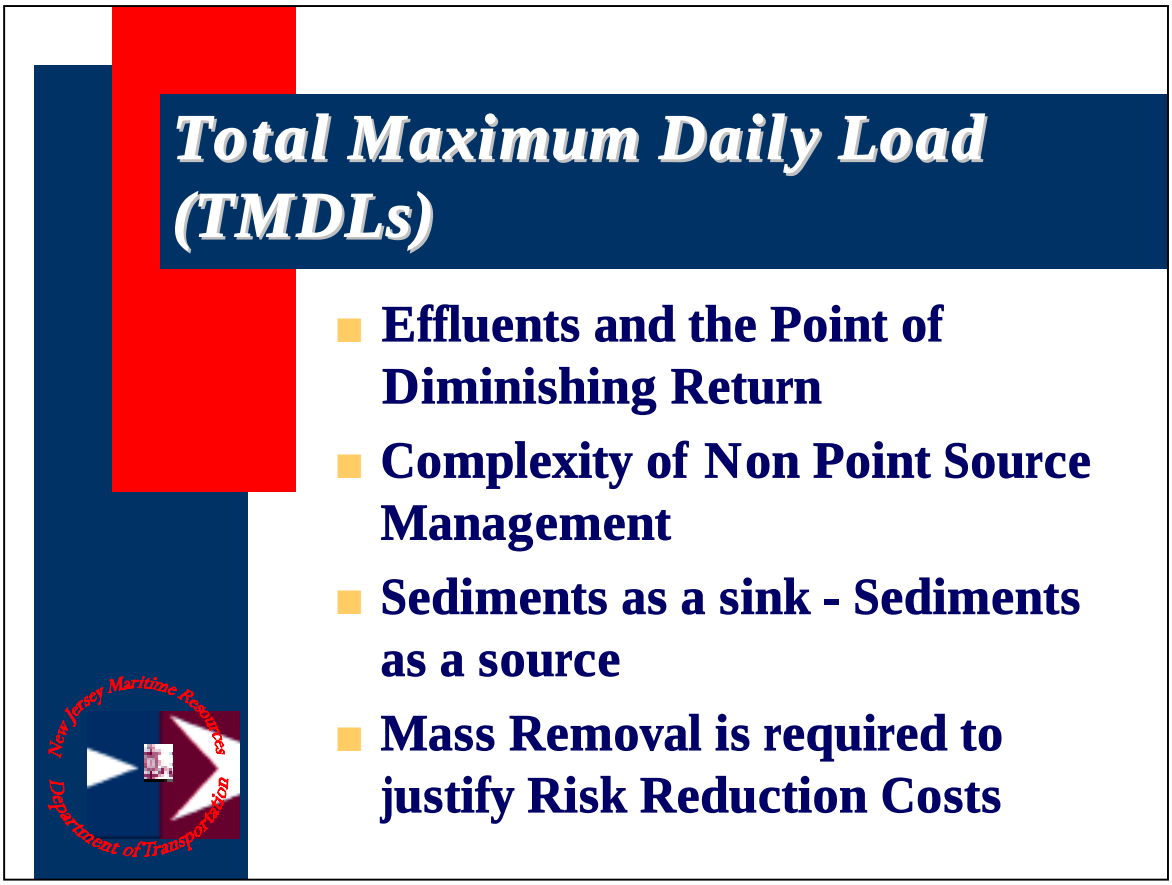
This material is then suitable as a capping material for old landfills, and fill for development projects such as this site in Elizabeth, NJ. Landfills produce enormous amounts of contaminated leachate that carries pollutants into the harbor and continually makes our dredged materials unsuitable for ocean disposal. One estimate is that over 400,000 gallons per acre per year of contaminated leachate enters the Port from abandoned landfills in the Meadowlands.

Brownfield Reclamation

Abandoned industrial property, or “brownfields” are another source of contamination, such as this site in Sayreville. These sites offer the potential for providing homes to large amounts of dredged materials, and the money recovered from eventual sale of recovered property can be used to finance the engineering controls necessary to reduce or eliminate further contamination of our dredged materials.



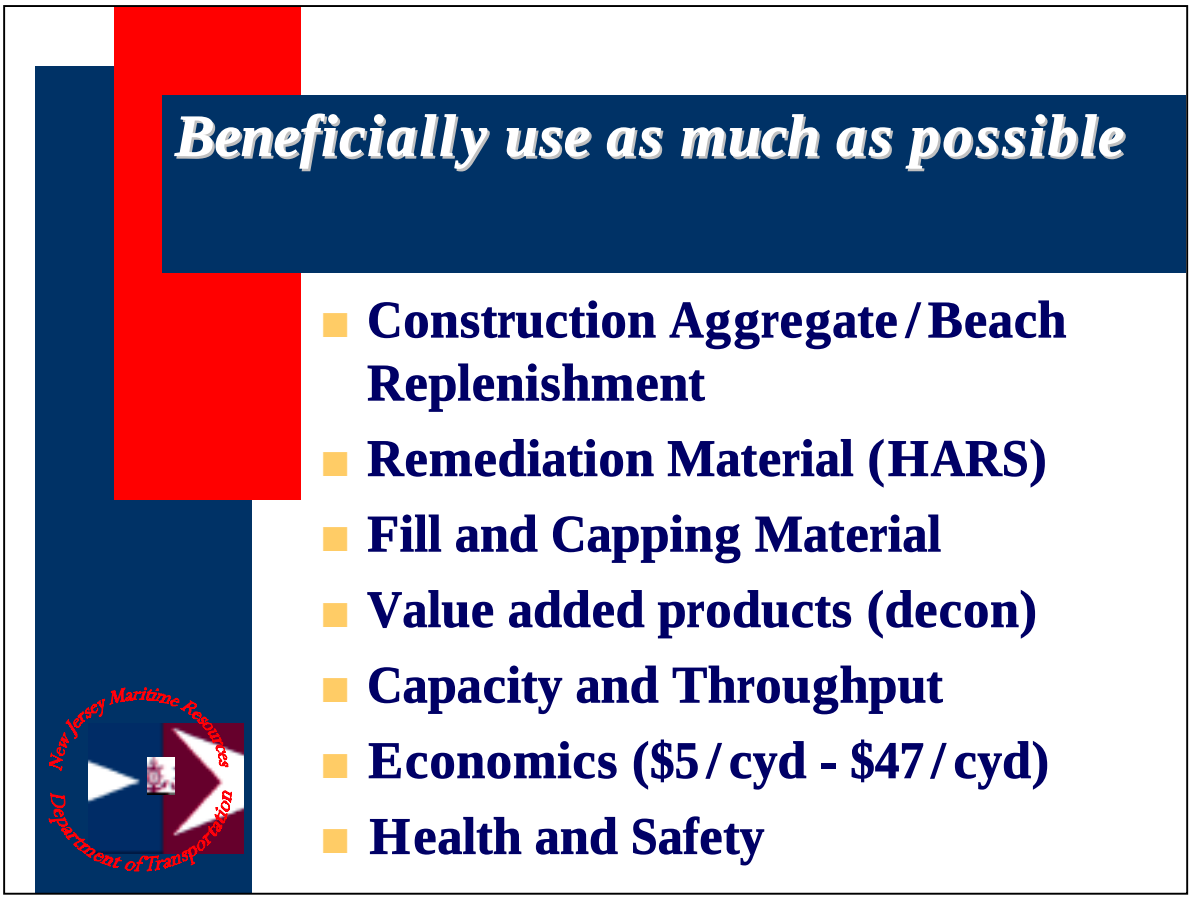
Understanding where contaminants are coming from and how they move about in the harbor is mandatory for long range planning for sediments. NJMR is working with the Hudson River Foundation on the development of a comprehensive contaminant fate and transport model of the harbor. The results of this model will allow the region to focus its efforts on trackdown of contaminant sources and their mitigation.



Contaminated sediments are going to take a larger and larger role in environmental planning in this region. The EPAs Total Maximum Daily Load or TMDL program is an excellent planning tool for effluents, but takes little notice of the role that sediments play in water quality issues. As our success with effluent cleanup results in cleaner and cleaner water, the contaminant trend to the sediments reverses and the sediments can release their contaminant loads. We need to make sure that we carefully examine the money we are spending on harbor restoration to make sure that we get the biggest bang for our buck. This will require a change in the way the regulatory programs view sediments, especially those that are highly contaminated.

NJMR and EPA have been working diligently to develop sediment decontamination technologies and this development program is about to bear fruit. Eric will spend time discussing this in detail. Our philosophy on decon is to use the high volume potential of the navigational dredging program to provide the economies of scale necessary to bring the costs of decontamination down to a level comparable with conventional upland placement technology. Once viable, hot spot remedial dredging becomes not only viable, but affordable.

With affordable decon technology in our toolbox we can begin to tackle the problem of reversing 150 years of contaminant mismanagement and make sure that our efforts to restore the harbor are not haunted by the potential for past mistakes to resurface. The results of the harbor modeling and toxics trackdown program will be used to objectively prioritize cleanup efforts.



The most visible part of the program, and the part that causes the most angst, is beneficial use. Beneficial use is really a catch all to describe any management method other than dumping it in a pile. Dredged material can be, and has been, used for beach replenishment, habitat creation, construction aggregate, fill material, capping material, "remediation" material at the HARS, and as feedstock for industrial processes (decon). The real heartburn is economics: the cost of beneficial use is often significantly greater than ocean disposal. Especially for upland placement. And beneficial use is often slower and less reliable than ocean disposal. And the politics of dredged material has scared the public, resulting in inflated concerns over worker health and safety.

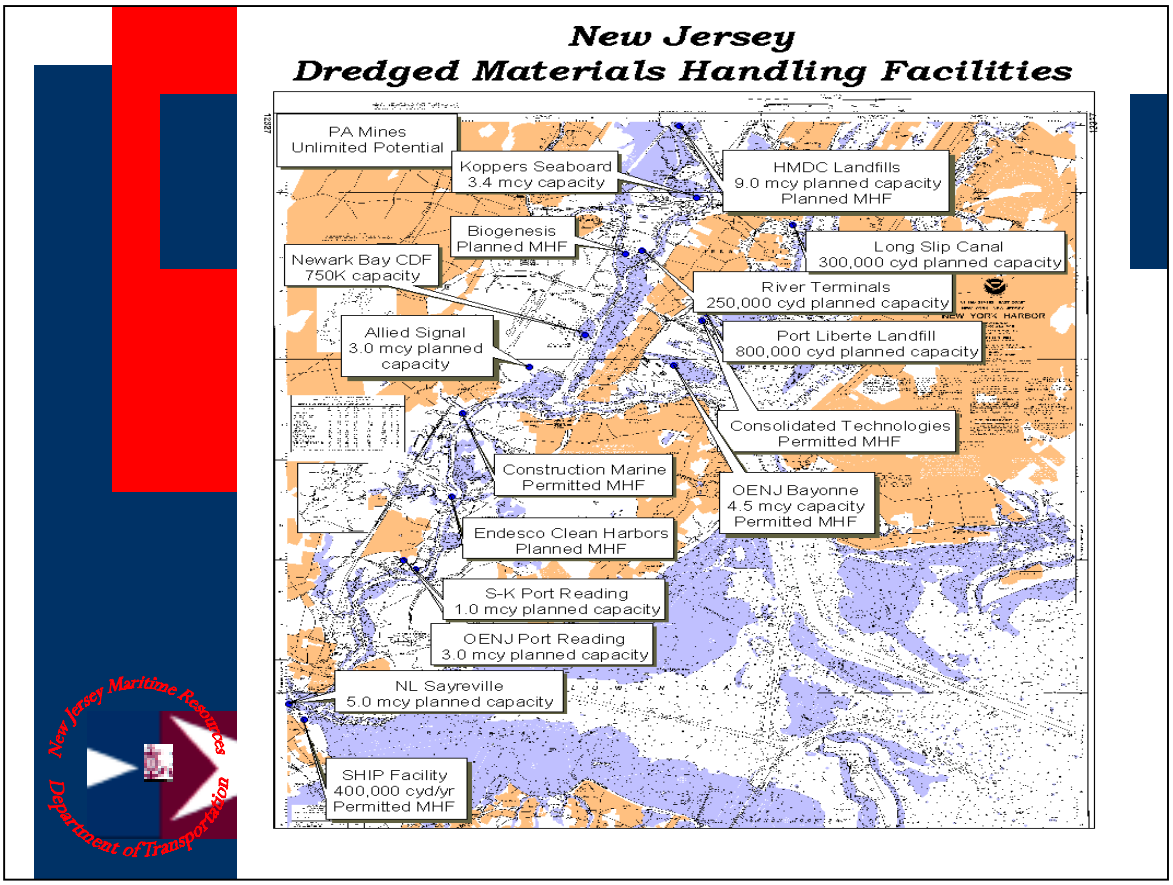
Sediment Stabilization

Dredged materials are stabilized with lime kiln dust, fly ash, or Portland cement to increase the pH, dewater, and produce a product that is leachate free. This product is excellent for bulk fill and contouring projects, landfill or brownfield capping, or mine reclamation. To date, the NJDEP has permitted 5 locations in the harbor,and over 2 million cubic yards of dredged materials have been brought upland.

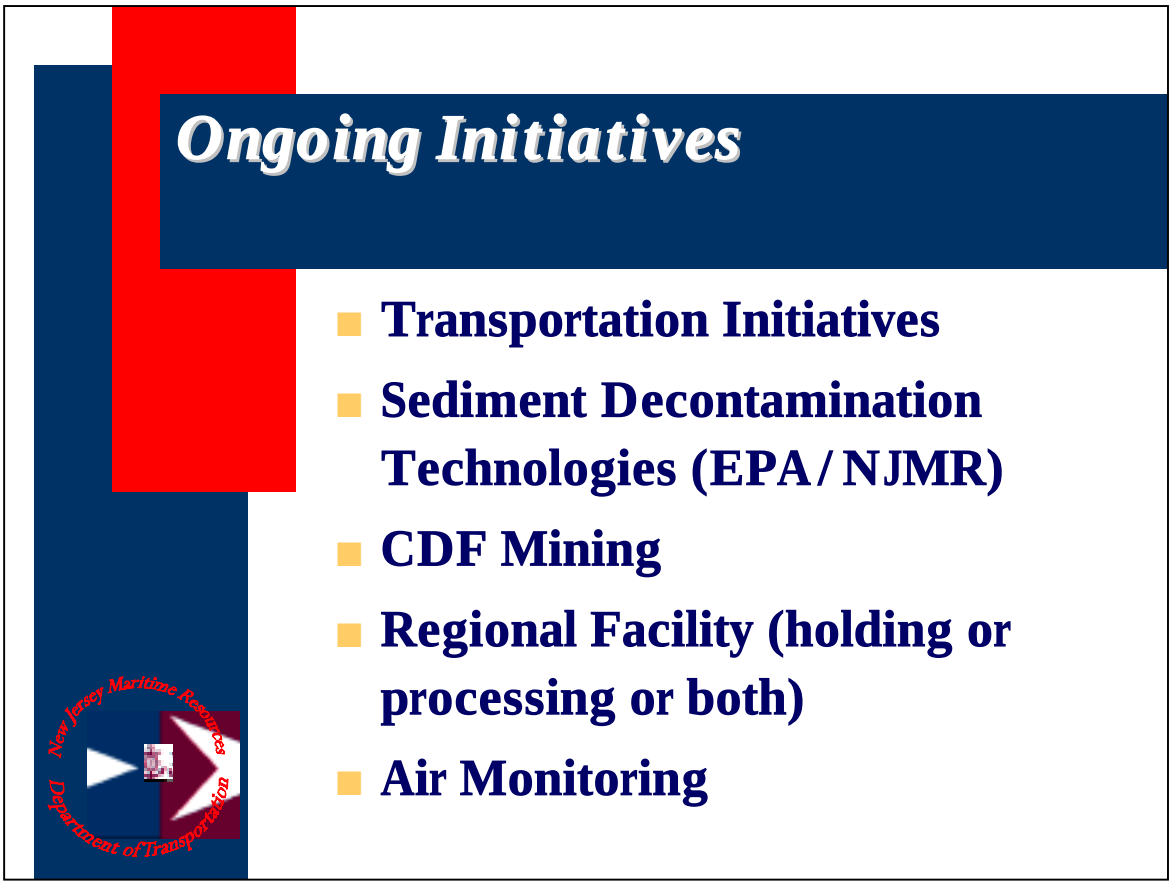
In the spring of 2000, the first permanent dredged materials handling facility went on line in Jersey City. The facility is permitted to process material for any placement option, and has its own dewatering discharge permit. CTI claims that they are capable of handling 5 to 10,000 cyd a day, but so far have operated below that level. An additional shift, experience, and a more secure material stream will likely result in greater efficiency. We'll be watching them closely when they start up operations again this summer

A significant part of CTIs mission is to obtain a general permit for use of dredged materials in abandoned mine reclamation in PA. Sponsored by NJMR and the Port Authority, CTI has moved about 150,000 cyd of amended dredged materials to the Bark Camp Mine Reclamation Laboratory in Clearfield County. Other closer mines are on the horizon if the project is successful.

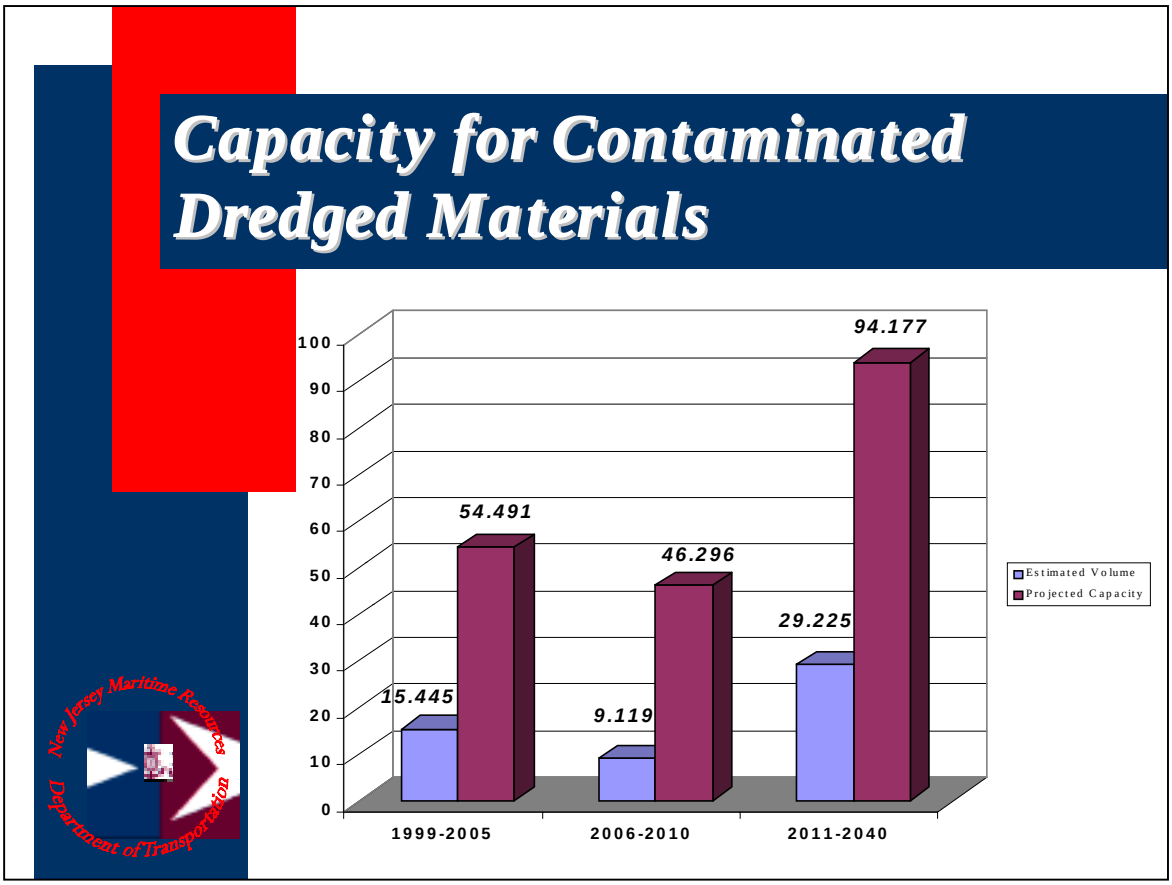
Another ambitious project for dredged material veterans OENJ Cherokee is the Bayonne Municipal Landfill/P&G site. This site is permitted to take 4-5 million cubic yards of amended dredged material and the site will be turned into a golf course. OENJ has been waiting for over 2 years for some dredged material to process.



And we have identified numerous other sites throughout the Port. These locations are in various states of completion. But given the lack of longterm contracts for dredged materials, will be fully permitted only as the immediate need arises. And this means either imminent bids or visible movement on the part of the Corps. Realize that for the past two years, very little material, less than 250,000 cyd has moved upland.



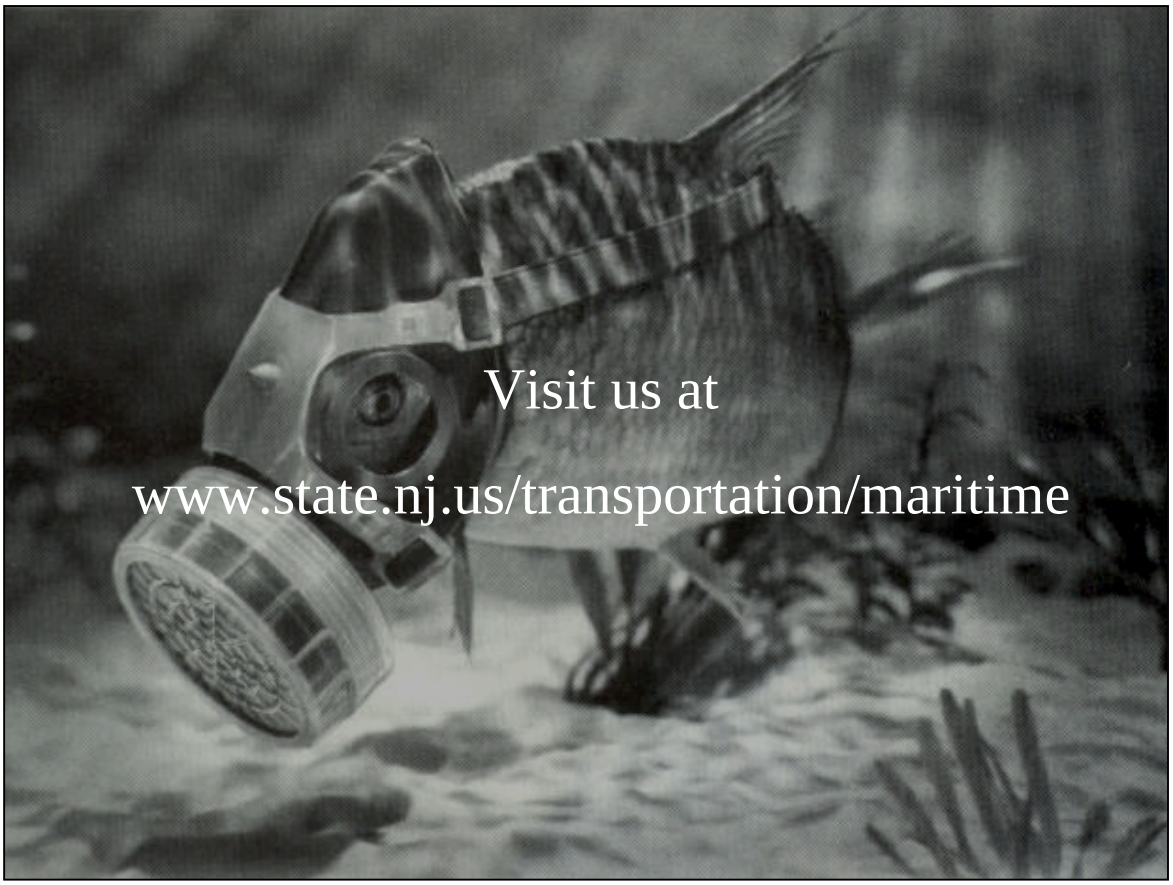
And we continue to work on more tools for our management toolbox. We are in the final stages of developing criteria for the use of dredged materials in transportation projects. The sediment decontamination program, if successful, will realistically provide a million yards a year of capacity that is continually renewable. We are working in the Delaware and Shore communities to explore mining CDFs to free up capacity and provide material for landfill closure and construction projects. NJMR and the Port Authority are looking closely at a regional facility for handling dredged materials. And we have data being generated by local universities regarding the loss of contaminants from beneficial use projects.



The question on everyone's mind is, do we have enough room for all the contaminated materials we need to manage? Actually, yes. And more. Even with the volumes from the deepening projects we will have more than enough capacity. Recent developments on the ocean disposal front appear to indicate that we will need even more capacity upland. Well, we're ready.

And now for the controversial part of my presentation. There has been considerable resistance to beneficial use in the region. Some of this is because it is new, some of it is economic. But the reality is that disposal of dredged material is rapidly becoming impossible. There are only so many holes that can be dug in the harbor, and with benficial use options available, use of disposal is legally restricted. NOAA has become extremely protective of habitat that might be available for new pits, and the public continues to be opposed to disposal. Most importantly, disposal removes material from upland vendors which has already resulted in the loss of one of our options. Delays and the threat of disposal are NOT in the regional interest.

Many folks have spent a lot of energy lately defending against implementation of this plan. We need to all come to the realization that this program is not the problem, it's the solution, and work together to make the program a success. The costs of upland management may be mitigated through streamlined Corps contracting, improved planning to remove the humps and bumps of supply, improved dredging technology to reduce entrained water. Encouraging multiple vendors through small quantity guaranteed contracts will increase competition and reduce costs. But this requires a much more cooperative spirit between the regional stakeholders than we have had to date. Beneficial use is here to stay, lets make it work to all of our benefit.



For updates on NJMR projects, please visit us on the web.

Now, having railed against lack of cooperation, I would like to turn the platform over to my good friend Eric Stern of the USEPA. Eric and I have been cooperating on the decon project for 4 years now, and it is paying off.